

MAGSOLAR

SOLAR HIGH-MAST RANGE



INTRODUCTION

Magnitech's MagSolar range delivers a range of solar high-mast lighting solutions tailored to your specific requirements. Each system offers unique features and benefits, guaranteeing a **high-performance, off-grid lighting solution** ideal for mounting heights up to 25 meters.



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MAGSOLAR BENEFITS

Unparalleled Performance:

Cutting-edge technology and premium components ensure optimal longevity, exceptional brightness, and reliable illumination exactly where you need it.

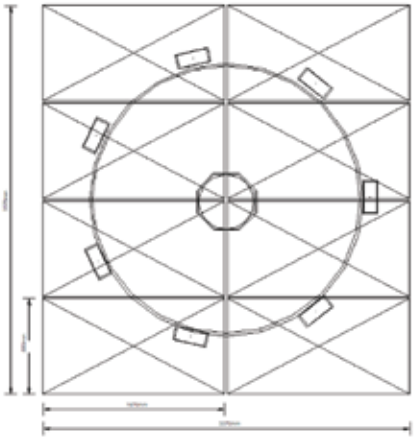
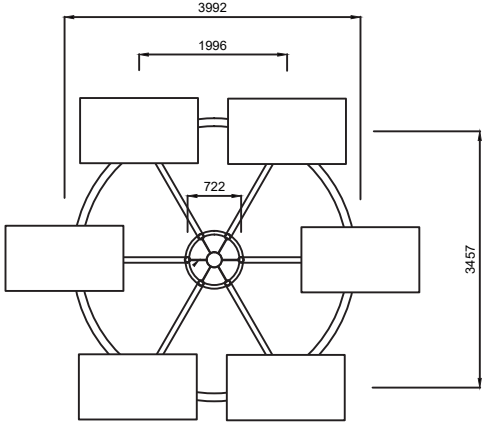
Harnessing the power of the sun, MagSolar empowers you to reduce your environmental impact and decrease energy costs.

Enhanced Functionality and Protection:

Optional integration of communication technology empowers you with improved system usability and facilitates remote monitoring.

Additional protection mechanisms safeguard against theft and vandalism.

HIGH-MAST VARIATIONS

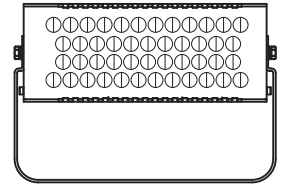
	FIXED MAST	RING MAST
Diagram		
Description	<p>This configuration utilizes a coplanar array where all solar panels are systematically arranged in a grid formation at the apex of the high mast.</p>	<p>This configuration features a circular arrangement where each solar panel is directly paired with a dedicated LED luminaire. The Ring Mast allows for the elevation and descent of the entire ring structure via a winch mechanism.</p>
Configuration Options	<p>A choice of four, six, or eight photovoltaic panels paired with four to eight corresponding LED luminaires. The design allows for the flexibility to dedicate one panel to power a communication and/or peripheral device.</p>	<p>A choice of two, four, or six photovoltaic panels paired with an equal number of corresponding LED luminaires. This unique design allows for optimal orientation for increased efficiency.</p>



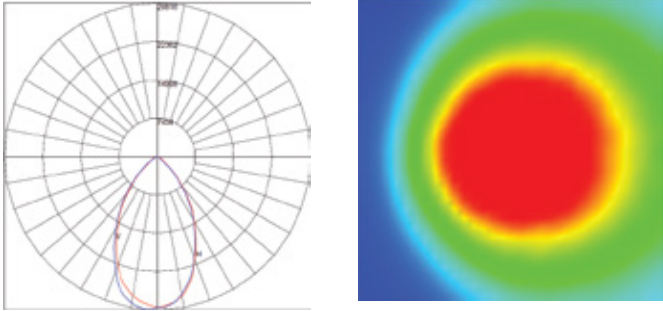
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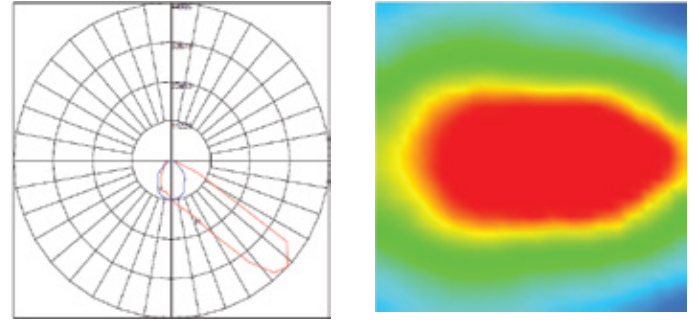
FLOODLIGHT LUMINAIRE CONFIGURATION



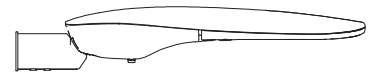
Configuration 1:



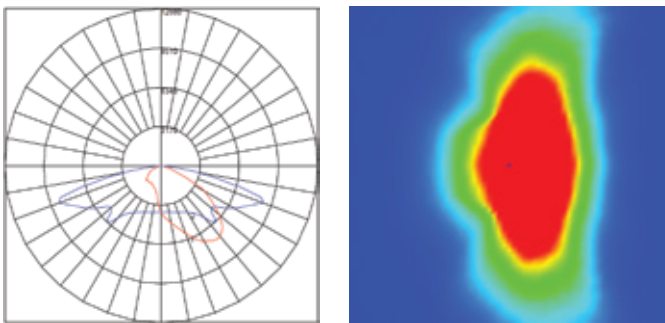
Configuration 2:



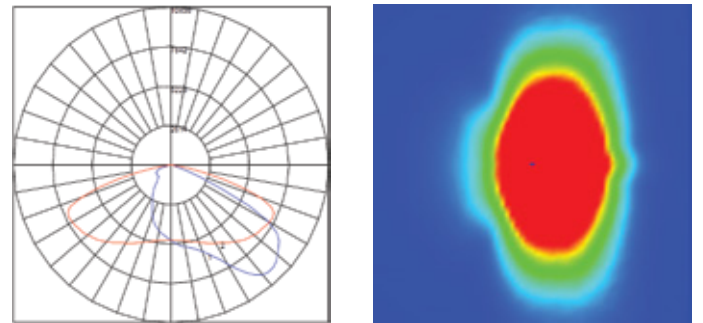
STREETLIGHT LUMINAIRE CONFIGURATION



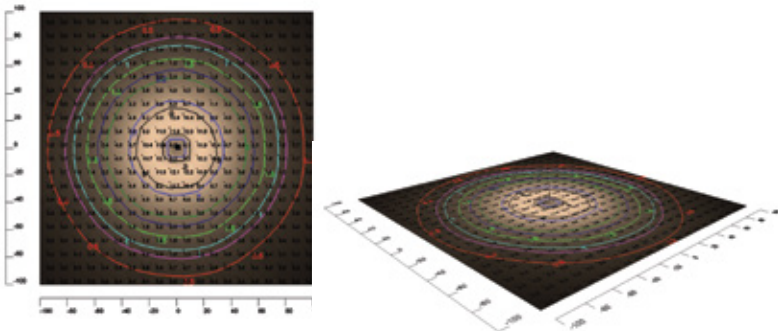
Configuration 1:



Configuration 2:



Rendered View Example:



TECHNICAL CHARACTERISTICS

PRODUCT CONFIGURATIONS

The MagSolar High-Mast solution incorporates a unique configuration that allows all solar panels to be independently adjusted to their optimal orientation. This innovative design ensures consistently maximized energy capture, ultimately enhancing operational efficiency.

The MagSolar High-Mast solutions are offered with either floodlight or streetlight luminaires.

LIGHTING				
Nominal Power	80	70	50	40
Nominal Flux	14 800	13 650	9 500	9 800
Efficiency	185	195	190	195

BATTERY				
Technology	LITHIUM LIFEPO4			
Capacity	1366 Wh / 54 Ah 25,6 V	1366 Wh / 54 Ah 25,6 V	780 Wh / 60 Ah 12,8 V	780 Wh / 60 Ah 12,8 V
Depth of discharge	60%	60%	60%	60%
Cycles lifetime	4500	4500	4500	4500
Working Temperature	-10 +70 °C	-10 +70 °C	-10 +70 °C	-10 +70 °C
Weight	7,2 KG	7,2 KG	4,8 KG	4,8 KG

SOLAR PANEL				
Power	290	290	185	185
Cells Type	TOP CON MONOCRISTALINE GRADE A			
Certificates	EC 61215 - IEC 61730 I and II - IEC 60904			
Weight	16KG	16KG	11,2KG	11,2KG

ELECTRONIC				
Controller	MPPT		MPPT	
Cabling	WATERPROOF CABLING PLUG & PLAY		WATERPROOF CABLING PLUG & PLAY	
Protection	BMS PROTECTION		BMS PROTECTION	

WORKING MODE				
Mode	PR 1	PR 2	PR 1	PR 2

OVERALL WEIGHT				
Mode	26,9 KG		19,3 KG	

*These options are available in a flexible configuration with 2, 4, or 6 heads per fixture, allowing you to tailor the solution to your project requirements.



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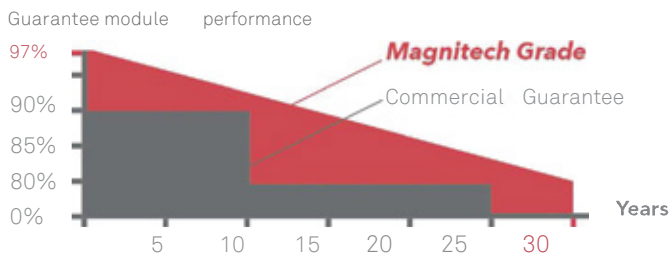
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TECHNICAL CHARACTERISTICS

SOLAR PANEL UP TO 345 WATTS

High efficiency mono-crystalline Solar panels. Carefully selected Grade A Solar cells. Up to 23% efficiency. 5 Busbar cells for a better collected current capability. Modern design Anodised Aluminium Alloy Frame, corrosion resistant.

OUR PV PERFORMANCE GUARANTEE



BATTERY LITHIUM LIFEPO4

The MagSolar range is equipped with a Lithium Ion Phosphate (LifePo4) battery. This technology is proved to be the best chemical technology for solar applications on the market.

With a cycle life of over 4000 cycles @ 80% DOD, the battery enjoys over 10 years of life.

ELECTRONIC PROTECTION BATTERY MANAGEMENT SYSTEM (BMS)

The electronic algorithm protects the battery from operating outside its safe area. Monitoring its state, calculating secondary data, reporting that data, controlling its environment, authenticating it and / or balancing it.

The BMS offers **MULTI PROTECTION:**

- Over/Under Load
- Over Charge & Discharge
- Over/Under Current
- Temperature Management
- Over/Under Voltage

EASY MAINTENANCE & ANTI THEFT SCREWS

Easy and direct access to the battery casing for maintenance. The fixation is made with **anti theft screws**, which requires special tooling to unscrew.

Weight:

Dependent on configuration selected.

Autonomy:

Up to 3 days. Dependent on configuration selected.



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TECHNICAL CHARACTERISTICS

CONTROLLER SMART MPPT

MagSolar is equipped with a High Quality MPPT Controller, using top technology semiconductors.

FEATURES

High Transfer Efficiency:

Charging efficiency up to 98%

Minimal stand-by power consumption:

Current consumption \leq 10mA

Intelligent battery management - 3 Phases charging:

MPPT Charge / Constant Voltage / Floating Voltage

Intelligent LED driver:

Auto detecting of Dusk and Dawn for automatic operation. 7 Lighting program configurations.

Anti Black Out:

Load adjust according to battery capacity ensuring all night long lighting in any weather conditions.



LUMINAIRE:

- Efficiency: Up to 195lm/w
- Housing Material: Marine Grade High pressure die cast aluminium
- IP Protection: IP66
- Impact Resistance: IK08 (Glass) ; IK10 (UV Stablised Polycarbonate)
- Colour Temperature: 2700k - 6000k. As per required specification

AVAILABLE INTEGRATION TECHNOLOGIES:

- Bluetooth
- 2G/3G/4G
- WiFi
- GPS
- PWM
- LoRa

OPERATION MODE

The photosensor will automatically switch on & off - from dusk to dawn.

Magnitech Technology gives you the option to choose from 2 different pre-programmed lighting profiles, pictured in the table below:

	SUNSET	MIDNIGHT		SUNRISE
PR 1	1 HR - 80%	4 HRS - 100%	4 HRS - 80%	2 HRS - 100%
PR 2	1 HR - 80%	2 HRS - 100%	2 HRS - 70%	4 HRS - 50%



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